

A Balancing Act: Landfill Gas Development vs. Regulatory Compliance

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Introduction

- Inherent conflict
- Great resource ...with strings attached

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Potential Development Issues

- Buoyant expectations for successful LFG to energy projects
- Unknown landfill history
- Pressure to reduce operational costs

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Potential Compliance Issues

- Limited working knowledge of regulations
- Proper recordkeeping and reporting
- Timely corrective actions

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The Landfill Gas Paradox

- The fuel source is the liability
- Gas components

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Methane

- Fuel
- Hazard*
- Greenhouse gas

* Regulated

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Carbon Dioxide

- Greenhouse gas
- Possible contaminant

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Trace Constituents

- Pollutants*
- Hazards*
- Contaminants

* Regulated

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Liquid (Condensate)

- Pollutant*
- Contaminant

* Regulated

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The Challenge

- Recover fuel
- Control environmental liability

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Successful Project Philosophy

- Do both without compromising either
- Be consistent with fuel recovery AND environmental control
- Represent stakeholders

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Project Goals

- Understand design elements for:
 - Recovery
 - Control
- Operations meet both considerations
- Staffing
 - Train/educate
 - Alignment with project philosophy

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Design Considerations

- Recovery
 - Keep the BTU content high
 - Prevent dilution of fuel with air

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Design Considerations

- Control
 - Prevent migration (Subtitle D)
 - Control emissions (NSPS)
 - Control odors (Local)

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Construction Practices

- Adjust to differing/unexpected conditions
 - Extraction wells
 - Liquids
 - Limited gas production
 - Header lines
 - Routing changes

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O&M Techniques

- Recovery
 - Avoid over-pulling
 - Collect sufficient quantities
- Control
 - Keep perimeter monitoring probes clear
 - Maintain pressure, temperature, and oxygen limits

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Strategies for Project Balance

- Multiple collection systems
 - "Good gas/bad gas"
 - Perimeter system for migration
 - Additional shallow collection for emissions/odors

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More Strategies

- Wellfield O&M
 - More frequent monitoring/adjusting
 - Wellhead modifications

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More Strategies

- Effective communication
- Set responsibilities in advance
- Project team defined: who does what
- Respond to data review/analysis
- Document corrective actions

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Recap

- Inherent conflict
- Dual-role philosophy
- Project goals
- Strategies for success

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